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EXAMINER

GUPTA, PARUL H

ART UNIT

PAPER NUMBER

2627

NOTIFICATION DATE

DELIVERY MODE

11/28/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/731,093	Applicant(s) PARK ET AL.	
	Examiner PARUL GUPTA	Art Unit 2627	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 20-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 21, 22, 24-27, 29-31, 33 and 34 is/are rejected.
- 7) ☐ Claim(s) 20, 23, 28 and 32 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Claims 1-7 and 20-34 are pending for examination as interpreted by the examiner. The amendment and arguments filed on 7/24/08 were considered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-3, 6-7, 21, 24-27, 29, 31, and 33-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takano et al., US Patent 5,448,728 in view of Ito et al., US Patent 6,292,445.

Regarding claim 1, Takano et al. teaches a method of managing overwrite on a write-once optical disc (column 1, lines 40-45), the disc including a user data area having a specified area where data is written therein, the method comprising: in response to a request that the specified area having the data written therein and writing replacement-recording data associated with the request (column 1, lines 60-61), starting from a rear of the user data area of the disc (column 6, lines 2-6); and recording, in a management area of the disc (shown in figure 11), first information indicating a last logical sector number of the user data area, wherein the last logical sector number has been changed in accordance with the replacement recording operation such that the recorded first information indicates a change in a size of the user data according to the replacement recording operation (column 6, lines 8-27), in a management area of the

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disc (column 6, lines 58-63); and recording second information indicating positions of the specified area and the replacement-recorded area portion, in the management area of the disc, wherein the first information and the second information are recorded at a same update time after the writing of the replacement-recording data is performed (column 6, lines 17-27). The information stored in the management area indicates the positions and is the second information. The first information is the beginning ID of the information. Takano et al. does not but Ito et al. teaches specifically that the data is replaced, or overwritten, and the management area stores information regarding the replaced and replacement areas (column 4, lines 59-67). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Takano et al. with replacement data as taught by Ito et al. The motivation would be to conserve space by overwriting on unnecessary data instead of using more disc space to write extra information to replace defective information.

Regarding claim 2, Takano et al. teaches the method of claim 1, wherein the last logical sector number of the user data area is obtained by updating information on a previous last logical sector number of the user data area (column 6, lines 17-27).

Regarding claim 3, Takano et al. teaches the method of claim 1, wherein the last logical sector number of the user data area is recorded as new management information while information on a previous last logical sector number of the user data area is maintained (column 7, lines 5-7).

Regarding claim 6, Takano et al. teaches in figure 10B a method of managing overwrite on a write once optical disc, the disc including a user data area having a

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specified area where data is written therein, and an outer spare area (column 1, lines 40-45), the method comprising: when the specified area having the data written therein is requested to be overwritten, writing recording data (column 1, lines 60-61), to an area preceding the outer spare area of the disc ("B AREA"); extending a size of the outer spare area as large as a size of the area where the replacement-recording data is written in the writing step (column 6, lines 8-10); and recording, in a management area of the disc, first information indicating a last logical sector number of the user data area, wherein the last logical sector number has been changed in accordance with the extension of the outer spare area such that the recorded first information indicates a change in a size of the user data area according to the extension of the outer spare area (column 6, lines 8-27 and 58-63); and recording second information indicating positions of the specified area and the replacement-recorded area, in the management area of the disc. The information stored in the management area indicates the positions and is the second information. The first information is the beginning ID of the information. Takano et al. does not but Ito et al. teaches specifically that the data is replaced or overwritten and the management area stores information regarding the replaced and replacement areas (column 4, lines 59-67). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Takano et al. with replacement data as taught by Ito et al. The motivation would be to conserve space by overwriting on unnecessary data instead of using more disc space to write extra information to replace defective information.

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Regarding claim 7, Takano et al. teaches in figure 10B a method of managing overwrite on a write once optical disc, the disc including a user data area having a specified area where data is written therein, and an outer spare area (column 1, lines 40-45), the method comprising: in response to a request that the specified area having the data written therein be overwritten, writing recording data (column 1, lines 60-61), to a replacement-recording area of the an outer spare area of the disc ("B AREA"); determining whether or not to extend a size of the outer spare area in consideration of a size of the replacement-recording area (column 6, lines 8-10); and recording, in a management area of the disc, first information indicating a last logical sector number of the user data area, wherein the last logical sector number has been changed in accordance with the determination of the extension of the outer spare area such that the recorded first information indicates a change in a size of the user data area according to the extension of the outer spare area (column 6, lines 8-27 and 58-63); and recording, in the management area, second information indicating positions of the specified area and the replacement-recording area of the outer spare area (column 6, lines 17-27). The information stored in the management area indicates the positions and is the second information. The first information is the beginning ID of the information. Takano et al. does not but Ito et al. teaches specifically that the data is replaced or overwritten and the management area stores information regarding the replaced and replacement areas (column 4, lines 59-67). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Takano et al. with replacement data as taught by Ito et al. The motivation would be to conserve space by overwriting on

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unnecessary data instead of using more disc space to write extra information to replace defective information.

Regarding claim 21, Takano et al. teaches the method of claim 1, wherein the user data area is filled up with various replacement-recording data, first starting with the rear portion of the user data area (shown in figure 11) and then areas of the user data area before the rear portion in a rear-to-front direction . Takano et al. does not but Ito et al. teaches specifically that the data is replaced or overwritten and the management area stores information regarding the replaced and replacement areas (column 4, lines 59-67). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Takano et al. with replacement data as taught by Ito et al. The motivation would be to conserve space by overwriting on unnecessary data instead of using more disc space to write extra information to replace defective information.

Regarding claim 24, Takano et al. teaches the method of claim 6, wherein after the extending step, the outer spare area is defined to include a previous outer spare area and the area where the replacement-recording data is written in the writing step (column 6, lines 8-27).

Regarding claim 25, Takano et al. teaches an apparatus for managing overwrite on a write once optical disc, the disc including a user data area having a specified area where data is written therein (column 1, lines 40-45), the apparatus comprising: in response to a request that the specified area having the data written therein be overwritten, a recording unit configured to write replacement-recording data associated

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with the request (column 1, lines 60-61), starting from a rear portion of the user data area (shown in figure 11); the recording unit further configured to record, in a management area of the disc, first information indicating a last logical sector number of the user data area, wherein the last logical sector number has been changed in accordance with the replacement recording operation such that the recorded first information indicates a change in a size of the user data area according to the replacement recording operation (column 6, lines 58-63); and the recording unit further configured to record second information indicating positions of the specified area and the replacement-recorded area portion, in the management area of the disc (column 6, lines 17-27). Takano et al. does not but Ito et al. teaches specifically that the data is replaced or overwritten and the management area stores information regarding the replaced and replacement areas (column 4, lines 59-67). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Takano et al. with replacement data as taught by Ito et al. The motivation would be to conserve space by overwriting on unnecessary data instead of using more disc space to write extra information to replace defective information.

Regarding claim 26, Takano et al. teaches the apparatus of claim 25, wherein the last logical sector number of the user data area is obtained by updating information on a previous last logical sector number of the user data area (column 6, lines 8-27).

Regarding claim 27, Takano et al. teaches the apparatus of claim 25, wherein the last logical sector number of the user data area is recorded as new management information while information on a previous last logical sector number of the user data

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area is maintained as it is (column 10, lines 45-55 show how the changed information has another area dedicated especially to it).

Regarding claim 29, Takano et al. teaches the apparatus of claim 25, wherein the user data area is filled up with various replacement-recording data, first starting with the rear portion of the user data area and then areas of the user data area before the rear portion in a rear-to-front direction (shown in figure 11).

Regarding claim 31, Takano et al. teaches an apparatus for managing overwrite on a write once optical disc, the disc including a user data area having a specified area where data is written therein, and an outer spare area (column 1, lines 40-45), the apparatus comprising: when the specified area having the data written therein is requested to be overwritten, a recording unit configured to write replacement-recording data to an area preceding the outer spare area of the disc (column 1, lines 60-61); the recording unit further configured to extend a size of the outer spare area as large as a size of the area where the replacement-recording data is written (column 6, lines 8-10); the recording unit further configured to record, in a management area of the disc, first information indicating a last logical sector number of the user data area, wherein the last logical sector number has been changed in accordance with the extension of the outer spare area such that the recorded first information indicates a change in a size of the user data area according to the extension of the outer spare area (column 6, lines 58-63); and the recording unit further configured to record second information indicating positions of the specified area and the replacement-recorded area, in the management area of the disc (column 6, lines 17-27). Takano et al. does not but Ito et al. teaches

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specifically that the data is replaced or overwritten and the management area stores information regarding the replaced and replacement areas (column 4, lines 59-67). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Takano et al. with replacement data as taught by Ito et al. The motivation would be to conserve space by overwriting on unnecessary data instead of using more disc space to write extra information to replace defective information.

Regarding claim 33, Takano et al. teaches the apparatus of claim 31, wherein after the size of the outer spare area has been extended, the outer spare area is defined to include a previous outer spare area and the area where the replacement-recording data is written (column 6, lines 8-27).

Regarding claim 34, Takano et al. teaches a computer-readable storage medium, comprising: a user data area having a specified area where data is written therein (column 1, lines 40-45); and a management area, wherein in response to a request that the specified area be overwritten (column 1, lines 60-61), replacement-recording data associated with the request is written starting from a rear portion of the user data area (shown in figure 11), wherein first information indicating a last logical sector number of the user data area is written in the management area, where the last logical sector number has been changed in accordance with the replacement recording operation such that the recorded first information indicates a change in a size of the user data area according to the replacement recording operation (column 6, lines 58-63), and wherein second information indicating positions of the specified area and the replacement-recorded area portion are written in the management area (column 6, lines

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17-27). Takano et al. does not but Ito et al. teaches specifically that the data is replaced or overwritten and the management area stores information regarding the replaced and replacement areas (column 4, lines 59-67). It would have been obvious to one of ordinary skill in the art at the time of the invention to use the method of Takano et al. with replacement data as taught by Ito et al. The motivation would be to conserve space by overwriting on unnecessary data instead of using more disc space to write extra information to replace defective information.

3. Claims 4-5, 22, and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takano et al. in view of Ito et al. in view of Miyamoto et al., US Patent 5,867,455.

Takano et al. in view of Ito et al. teaches the limitations of independent claim 1 as set forth above.

Regarding claim 4, Takano et al. further teaches the method of claim 1, wherein the optical disc is a dual-layer type write once of optical disc write once, to which the method is applied in the same manner. However, Takano et al. in view of Ito et al. does not but Miyamoto et al. teaches that the disc is a dual-layer type disc in column 2, lines 25-26. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of a dual layer disc having user data areas as taught by Miyamoto et al. into the system of Takano et al. in view of Ito et al. The motivation would be to be effective in a read only memory (column 2, lines 38-42 of Miyamoto et al.) while storing more information than standard single layer discs.

Regarding claim 5, Miyamoto et al. further teaches a method, wherein the dual layers have user data areas consecutively given as one recording layer. Column 2, lines 25-42 explain the interaction between the first and third layers that help them operate as one layer. As the second layer is optional, the disc given only has dual layers. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of a dual layer disc having user data areas as taught by Miyamoto et al. into the system of Takano et al. in view of Ito et al. The motivation would be to be effective in a read only memory (column 2, lines 38-42 of Miyamoto et al.) while storing more information than standard single layer discs.

Regarding claim 22, Takano et al. in view of Ito et al. teach the method of claim 1. Takano et al. in view of Ito et al. do not but Miyamoto et al. teaches the method wherein the disc includes at least first and second recording layers (elements 51 and 53 of figure 19), and the user data area extending from one portion in the first recording layer to another portion in the second recording area such that the rear portion of the user data area is physically located at a front area of a portion of the second recording area belong to the user data area (different placement of elements 1 in layer 51 from elements 1 of layer 53 demonstrate this concept). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of a dual layer disc having user data areas as taught by Miyamoto et al. into the system of Takano et al. in view of Ito et al. The motivation would be to be effective in a read only memory (column 2, lines 38-42 of Miyamoto et al.) while storing more information than standard single layer discs.

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Regarding claim 30, Takano et al. teaches the apparatus of claim 25. Takano et al. in view of Ito et al. do not but Miyamoto et al. teaches the apparatus wherein the disc includes at least first and second recording layers (elements 51 and 53 of figure 19), and the user data area extending from one portion in the first recording layer to another portion in the second recording area such that the rear portion of the user data area is physically located at a front area of a portion of the second recording area belong to the user data area (different placement of elements 1 in layer 51 from elements 1 of layer 53 demonstrate this concept). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include the concept of a dual layer disc having user data areas as taught by Miyamoto et al. into the system of Takano et al. in view of Ito et al. The motivation would be to be effective in a read only memory (column 2, lines 38-42 of Miyamoto et al.) while storing more information than standard single layer discs.

Allowable Subject Matter

Claims 20, 23, 28, and 32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. None of the prior art of record, taken individually or in combination, teach the concept of jumping non-sequentially to find an unused area in which to record information.

Response to Arguments

Applicant's arguments with respect to all claims have been considered and moot in view of the new rejection, necessitated by the amendment. Applicant contends that

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neither Takano et al. nor Miyamoto disclose replacement-recording data. The examiner agrees, but maintains that Ito et al. teaches this concept in the given sections.

Applicant contends that the size of the user data area is not changed in Takano. The examiner disagrees. As currently claimed, the area where data is written, or user data area, is changed in size by using different allocations of space.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Park et al., US Patent 6,788,631, teaches expanding the size of the user data area.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Parul Gupta whose telephone number is (571)272-5260. The examiner can normally be reached on Monday through Thursday, from 9:30 AM to 6 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Feild can be reached on 571-272-4090. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Joseph H. Feild/
Supervisory Patent Examiner, Art
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Examiner, Art Unit 2627